

CLAIMS

1. A method of controlling the growth of a plant cell or a plant virus within that cell comprising increasing or decreasing the level and/or activity of retinoblastoma protein in that plant cell by incorporation therein of a recombinant nucleic acid.
- 5
2. A method as claimed in claim 1 characterised in that the nucleic acid is such as to increase or inhibit expression of a retinoblastoma protein in the cell.
- 10
3. A method as claimed in claim 1 characterised in that the nucleic acid is such as to express a retinoblastoma protein or peptide fragment of a retinoblastoma protein that interacts with viral LXCXE motif without affecting the normal functioning of the cell.
- 15
4. A method as claimed in claim 3 characterised in that the retinoblastoma protein has been rendered resistant to phosphorylation by cyclin dependent kinases by change or deletion of one or more consensus SP or TP sites found in the SEQ ID No. 2.
- 20
5. A method as claimed in claim 2 characterised in that the DNA or RNA is antisense to retinoblastoma protein encoding DNA or RNA and inhibits retinoblastoma protein expression.
- 25
6. A method of transforming a plant cell such that it is directed into the S phase of the cell cycle comprising introducing a nucleic acid encoding antisense RNA to a plant retinoblastoma protein.
- 30
7. Recombinant nucleic acid encoding for expression of
- 35

AMENDED SHEET

a retinoblastoma protein characterised in that the retinoblastoma protein has an amino acid sequence having 80% or more homology with that of SEQ No. 2 of the sequence listing attached hereto.

5

8. Recombinant nucleic acid as claimed in claim 7 characterised in that it comprises SEQ ID no. 1, bases 31-207, sequences only having degenerate substitutions thereof or sequences capable of hybridizing with a polynucleotide of SEQ ID No. 1 under conditions of high stringency.

10

9. Recombinant nucleic acid as claimed in claim 7 or 8 characterised in that it encodes for a retinoblastoma protein conservatively substituted with respect to SEQ ID No. 2.

15

10. Recombinant nucleic acid characterised in that it comprises antisense DNA or RNA to a plant retinoblastoma protein.

20

11. Recombinant nucleic acid as claimed in claim 10 characterised in that it comprises antisense DNA or RNA to a plant retinoblastoma protein comprising SEQ ID No. 2 or a sequence having at least 80% homology thereto.

25

12. Recombinant nucleic acid as claimed in claim 10 or 11 characterised in that it comprises antisense DNA or RNA to that of SEQ ID No. 1 or a sequence having at least 80% homology thereto.

30

13. Recombinant nucleic acid characterised in that it encodes for a retinoblastoma protein or a peptide fragment of a retinoblastoma protein that interacts with viral LXCE motif without affecting the normal

35

AMENDED SHEET

functioning of a plant cell.

14. Recombinant nucleic acid as claimed in claim 13 characterised in that it encodes for a plant retinoblastoma protein in which one or more consensus SP or TP sites found in the SEQ ID No. 2 have been changed or deleted.

10 15. A protein produced by the expression of a recombinant DNA or RNA as claimed in any one of claims 7 to 9, 13 and 14.

15 16. A protein as claimed in claim 15 characterised in that one or more consensus SP or TP sites found in the SEQ ID No. 2 have been changed or deleted.

17. A recombinant vector characterised in that it comprises a recombinant nucleic acid as claimed in any one of claims 7 to 9, 13 and 14.

20 18. A plant cell characterised in that it comprises a recombinant nucleic acid encoding for expression of a retinoblastoma protein.

25 19. A plant cell as claimed in claim 18 characterised in that it comprises a recombinant nucleic acid as claimed in any one of claims 7 to 9, 13 and 14.

30 20. A plant cell as claimed in claim 18 or 19 characterised in that it expresses a retinoblastoma protein from said nucleic acid.

35 21. A transgenic plant characterised in that it comprises a cell as claimed in any one of claims 18 to 20.